

Social Security: Benefit Calculation

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SUMMARY

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Old-Age and Survivors Insurance (OASI) and Disability Insurance (DI), commonly referred to on a combined basis as OASDI, are social insurance programs that protect insured workers and their family members against loss of income due to old age, disability, or death. These programs are often referred to as Social Security. Monthly Social Security benefit amounts are determined by federal law. Most Social Security beneficiaries are retired or disabled workers whose monthly benefits depend on their past earnings, the age at which they claimed benefits, and other factors. Benefits are also paid to workers' dependents and survivors based on the earnings of the insured workers.

The computation process involves three main steps:

- 1. First, a summarized measure of lifetime Social Security–covered earnings is computed. That measure is called the *average indexed monthly earnings* (AIME).
- 2. Second, a progressive benefit formula is applied to the AIME to compute the *primary insurance amount* (PIA). The benefit formula is progressive. As a result, workers with higher AIMEs receive higher Social Security benefits, with benefits received by people with lower earnings replacing a larger share of career-average earnings.
- 3. Third, an adjustment may be made based on the age at which a beneficiary chooses to begin receiving benefits. For retired workers who claim benefits at the full retirement age (FRA) and for disabled workers, the monthly benefit equals the PIA. Retired workers who claim earlier than the FRA receive monthly benefits lower than the PIA (i.e., an actuarial reduction), and those who claim later than the FRA receive benefits higher than the PIA (i.e., a delayed retirement credit).

Retired-worker benefits can be affected by other adjustments. For example, the *windfall elimination provision* can reduce benefits for individuals who receive a pension based on employment not covered by Social Security, and benefits can be temporarily withheld under the *retirement earnings test* if a beneficiary under the FRA continues to work and earns above a certain amount. Although not an adjustment, income tax can affect Social Security benefits and thus the beneficiary's net income.

Benefits for eligible dependents and survivors are based on the worker's PIA. For example, a dependent spouse can receive a benefit equal to 50% of the worker's PIA, and a widow(er) can receive a benefit equal to 100% of the worker's PIA. Dependent benefits may also be adjusted based on the age at which they are claimed and other factors.

In December 2020, there were approximately 64.8 million Social Security beneficiaries collecting an average monthly benefit of \$1,422. Retired-worker and disabled-worker beneficiaries accounted for 84.0% of the beneficiary population. The largest single category of beneficiaries was retired workers (71.4%), with an average monthly benefit of \$1,544. The second-largest category was disabled workers (12.6%), with an average monthly benefit of \$1,277. Family members of retired, disabled, or deceased workers accounted for the remainder of the beneficiary population (16.0%). The Social Security Administration's Office of the Chief Actuary estimates that about 93% of workers (180 million) are covered under the OASDI programs. Because of the number of people receiving benefits, the number of people expected to receive benefits, and the program's projected long-term financial imbalance, there has been some congressional interest in making changes to the benefit formula.

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Introduction

Old-Age and Survivors Insurance (OASI) and Disability Insurance (DI), commonly referred to on a combined basis as OASDI, are social insurance programs that protect insured workers and their family members against loss of income due to old age, disability, or death. These programs are often referred to as Social Security. Most Social Security beneficiaries are retired or disabled workers whose monthly benefits depend on their past earnings, their age, and other factors. Benefits are also paid to workers' dependents and survivors based on the earnings of the insured workers.

Social Security has a significant impact on beneficiaries, both young and old, in terms of income support and poverty reduction. Under current law, Social Security's revenues are projected to be insufficient to pay full scheduled benefits after 2035. For both of those reasons, Social Security is of ongoing interest to policymakers. Most proposals to change Social Security would change the benefit computation rules. Evaluating such proposals requires an understanding of how benefits are computed under current law.

This report provides several examples of how benefits are computed under current law. To help illustrate the benefit formula, this report makes use of *hypothetical earners*. Wages for hypothetical earners are expressed at each age as a percent of the Social Security Administration's (SSA's) Average Wage Index (AWI).³ Throughout this report, examples of benefit calculations are shown for very low, low, medium, and high lifetime hypothetical earners as well as *maximum earners*.⁴ This technique demonstrates how Social Security benefits are computed under current law, how career earnings affect benefit levels, and how program changes may affect beneficiaries. In addition, this technique illustrates how indexed parameters that change year to year affect benefit amounts. **Appendix A** provides more details, including distributional information, on wages of hypothetical earners born in 1951. This year is chosen simply because it is the youngest cohort of workers and beneficiaries for which complete information on indexed earnings and program specific factors are known.

¹ Research suggests that Social Security benefits accounted for most of the decline in poverty from 1967 through 2000. For more information, see CRS Report R45791, *Poverty Among Americans Aged 65 and Older*.

² Social Security Administration (SSA), Office of the Chief Actuary, *The 2020 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds*, April 22, 2020, https://www.ssa.gov/OACT/TR/2020/tr2020.pdf (hereinafter cited as "2020 Annual Report"). Under current law, the OASI and DI trust funds are distinct entities and cannot borrow from each other when faced with a funding shortfall. The shifting of funds between OASI and DI can be done only with authorization from Congress. In the past, Congress has authorized temporary interfund borrowing among the OASI, DI, and Medicare Hospital Insurance trust funds, as well as temporary payroll tax reallocations between OASI and DI, to deal with funding shortfalls. Most recently, under the Bipartisan Budget Act of 2015 (P.L. 114-74), Congress authorized a temporary reallocation of payroll taxes from the OASI fund to the DI fund for calendar years 2016-2018. Because of such actions, the OASI and DI trust funds are discussed on a combined basis. Separately, the OASI fund is projected to have asset reserves until 2034, at which point continuing income to the fund would be sufficient to pay 76% of OASI scheduled benefits. The DI fund is projected to have asset reserves until 2065, at which point continuing income would be sufficient to pay 92% of DI scheduled benefits (2020 Annual Report, p. 5.) The 2020 Annual Report reflects the trustees' understanding of the OASDI program at the start of 2020. Thus, it does not include potential effects of the Coronavirus Disease 2019 pandemic.

³ SSA, Office of the Chief Actuary (OCACT), Scaled Factors for Hypothetical Earnings Examples Under the 2020 Trustees Report Assumptions, April 2020 https://www.ssa.gov/OACT/NOTES/ran3/an2020-3.pdf.

⁴ A maximum earner is a worker who has earnings at or above the contribution and benefit base for each year starting at age 22 through the year prior to retirement (2020 Annual Report, p. 152). The contribution and benefit base for 2021 is \$142,800 (see SSA, 2021 Social Security Changes, https://www.ssa.gov/news/press/factsheets/colafacts2021.pdf).

Eligibility and Insured Status

Workers become eligible for Social Security benefits for themselves and for their family members by working in Social Security—covered employment.⁵ Generally speaking, about 93% of workers earn wages or self-employment income in Social Security—covered employment.⁶ While working in covered employment, workers earn quarters of coverage (QCs), or credits. The amount needed for a QC increases annually with growth in average earnings in the national economy as measured by the AWI (see **Table B-1**).⁷ In 2021, a worker earns one credit or QC for every \$1,470 of earnings, up to four per year. Therefore, a worker earning \$5,880 in covered employment at any point in the calendar year would be credited with the maximum number (i.e., four) of QCs for that year.

Insured Status

To be eligible for most benefits, workers must be *fully insured*, which requires one QC for each year elapsed after the worker turns 21 years old—with a minimum of six QCs and a maximum of 40 QCs—and the year before the worker attains age 62, the year before the worker dies, or the year before the worker becomes disabled. A worker is first eligible for Social Security retirement benefits at 62, so to be eligible for retirement benefits, a worker must generally have worked for 10 years. Workers are *permanently insured* when they are fully insured and will not lose fully insured status when they stop working under covered employment, for example, if a worker has the maximum 40 QCs.

Benefits may be paid to eligible survivors of a worker who was fully insured at the time of death.⁸ Some dependents are also eligible for survivors benefits if the deceased worker was *currently insured*, which requires earning six QCs in the 13 quarters ending with the quarter of death.

To be eligible for disability benefits, workers must also satisfy a recency of work requirement. Workers aged 31 or older must have earned 20 QCs in the 10 years before becoming disabled. Fewer QCs are required for younger workers.⁹

In the case of workers having work history in multiple countries, international *totalization* agreements allow workers who divide their careers between the United States and certain countries to fill gaps in Social Security coverage by combining work credits under each country's system to qualify for benefits under one or both systems. ¹⁰

⁵ A list of eligibility requirements for family members is covered in Appendix C. Covered employment is employment for which earnings are creditable for Social Security purposes (2020 Annual Report, p. 238). The roughly 7% of workers who are not covered by Social Security are state and local government workers, certain workers employed by religious groups, and certain noncitizen workers.

⁶ OCACT, "Social Security Program Fact Sheet," July 2020, https://www.ssa.gov/oact/FACTS/index.html.

⁷ The AWI is the average of all workers' wages subject to federal income taxes and contributions to deferred compensation plans. It is calculated using some wages that are not subject to the Social Security payroll tax.

⁸ For more information on survivors benefits, see CRS Report RS22294, *Social Security Survivors Benefits*.

⁹ To be eligible for disability benefits, workers must also be found unable to engage in substantial gainful activity. See CRS Report R44948, *Social Security Disability Insurance (SSDI) and Supplemental Security Income (SSI): Eligibility, Benefits, and Financing.*

¹⁰ See CRS Report RL32004, Social Security Benefits for Noncitizens.

Amount Needed to Earn Credits

As discussed, in 2021, a worker would earn one QC for each \$1,470 of earnings.¹¹ Therefore, a worker earning \$5,880 in covered employment at any point in the calendar year would be credited with the maximum number (i.e., four) of QCs for that year. Alternatively, if a worker earned \$4,410 in covered employment in 2021, he or she would be credited with three QCs for that year (\$4,410 divided by \$1,470).

Average Index Monthly Earnings

The first step of computing a Social Security benefit is determining a worker's *average indexed monthly earnings* (AIME), a measure of a worker's past earnings.

A worker's Social Security benefit is based on his or her earnings during covered employment. That is, only earnings from years of covered employment are included in the calculation. Earnings that were not covered (i.e., not subject to the Social Security payroll tax) are not included in the calculation.

Under current law, the Social Security payroll tax is applied to covered earnings up to an annual limit, or taxable maximum. The taxable maximum is indexed to national average wage growth for years in which a cost-of-living adjustment (COLA) is payable. The taxable maximum increases from \$137,700 in 2020 to \$142,800 in 2021. This level of earnings is both the contribution base (i.e., amount of covered earnings subject to the Social Security payroll tax) and the benefit base (i.e., amount of covered earnings used to determine benefits). Earnings in excess of the taxable maximum are not subject to the Social Security payroll tax and are not factored into benefit calculations.

Wage Indexing

Rather than using the amounts earned in past years directly, the AIME computation process first updates past earnings to account for the growth in overall economy-wide earnings. That is done by increasing each year of a worker's taxable earnings after 1950 by the growth in average earnings in the economy, as measured by the AWI, from the year of work until 2 years prior to eligibility for benefits, which for retired workers is at age 60. (Workers are first eligible for benefits at age 62. Professional processes of the national average wage grew from \$32,155 in 2000 to \$41,674 in 2010. So if a worker earned \$20,000 in 2000 and turned 60 in 2010, the *indexed* wage for 2000 would be \$20,000 × (\$41,674/\$32,155), or \$25,921. Earnings from later years—for retired workers at ages 60 and above—are not indexed.

Number of Years

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For retired workers, the AIME equals the average of the highest 35 years of indexed earnings divided by 12 (to change the benefit from an annual to a monthly measure). Those years of earnings are known as *computation years*. If the person worked fewer than 35 years in

¹¹ Since 1978, the amount needed to earn a QC has been indexed to changes in the AWI. See OCACT, "Quarter of Coverage," https://www.ssa.gov/OACT/COLA/QC.html. Under current law, the amount needed to earn a QC cannot decrease. That is, the amount required is the higher of (1) the amount in effect for the calendar year a determination is made or (2) the product of that calendar year's amount and the change in the AWI (42 U.S.C. §413(a)).

¹² SSA uses the national average wage indexing series to ensure that future benefits reflect the general rise in the standard of living over the course of a worker's earning history. For details, see "Index earnings used to compute initial benefits" in OCACT, "National Average Wage Index," https://www.ssa.gov/oact/COLA/AWI.html.

employment subject to Social Security payroll taxes, the computation includes some years of zero earnings.

In the case of workers who die before turning 62 years old, the number of computation years is generally reduced below 35 by the number of years until he or she would have reached 62. For example, the AIME for a worker who died at 61 is based on 34 computation years.

For disabled workers, the number of computation years depends primarily on the age at which they become disabled, increasing from 2 years for those aged 24 or younger to 35 years for those aged 62 or older.¹³

AIME for Hypothetical Workers Born in 1951

Table 1 shows the AIME for the four hypothetical scaled earners and maximum earner for the 1951 birth cohort. (Nominal annual earnings for this cohort are shown in **Table A-2**, and wage-indexed earnings for this cohort are shown in **Table A-3**.) These workers, born in 1951, are assumed to have entered the labor force in 1972 (i.e., age 21) and worked continually until 2013 (i.e., age 62). As discussed and shown in **Table A-3**, annual earnings until age 60 are wage-indexed using the AWI, whereas earnings for later years are kept at nominal values (reflected by an index factor of 1.00 in **Table A-3**). The AIME is calculated by taking the total of the highest 35 years of earnings and dividing by 420 (the number of months in 35 years).

Table 1. Total Wage-Indexed Earnings and Average Indexed Monthly Earnings (AIME) for Hypothetical Workers Born in 1951, by Earnings Level

	Very Low Earner	Low Earner	Medium Earner	Higher Earner	Maximum Earner
Total Earnings from Highest 35 Years of Wage-Indexed Earnings	\$375,065.37	\$675,159.58	\$1,500,603.99	\$2,400,932.27	\$3,586,573.11
AIME	893.00	1,607.00	3,572.00	5,716.00	8,538.00

Source: CRS.

Note: Wage-indexed earnings are rounded to the nearest cent, and AIMEs are rounded down to the nearest dollar (see 20 C.F.R. §404.211).

Primary Insurance Amount

The next step in determining a benefit is to compute the *primary insurance amount* (PIA) by applying a benefit formula to the AIME.

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and the Effect of Dropout Year Provisions.

¹³ The number of computation years equals the number of "elapsed years" minus any "dropout years." The number of elapsed years equals the calendar years after an individual turns 21 years old through the year before the individual first becomes eligible for disability benefits with a minimum of two. For every five elapsed years, there is one disability dropout year up to a maximum of five. In addition, people with fewer than three disability dropout years may be credited with up to two additional dropout years based on the care of a child for up to a total of three dropout years. See CRS Report R43370, *Social Security Disability Insurance (SSDI): Becoming Insured, Calculating Benefit Payments*,

First, the AIME is sectioned into three brackets (or segments) of earnings, which are divided by dollar amounts known as bend points. In 2021, the bend points are \$996 and \$6,002.¹⁴ Those amounts are indexed to the AWI, so they generally increase each year.¹⁵

Three factors—which are fixed by law at 90%, 32%, and 15%—are applied to the three brackets of AIME to allow for a progressive benefit formula. For workers with AIMEs of \$996 or less in 2021, the PIA is 90% of the AIME. Because the other two factors are lower, the share of earnings that is replaced by the Social Security benefit declines as AIMEs increase. For workers who become eligible for retirement benefits, become disabled, or die in 2021, the PIA is determined as shown in the examples in **Table 2**. Benefits are based on covered earnings. Earnings up to the maximum taxable amount (\$142,800 in 2021) are subject to the Social Security payroll tax. If a worker earns the maximum taxable amount in every year of a full work history, becomes eligible in 2021, and claims benefits at the full retirement age (FRA), the maximum PIA is \$3,148.

PIA for Hypothetical Workers Born in 1951

Table 2 shows how to calculate the PIAs for the four hypothetical scaled earners and the maximum earner for the 1951 birth cohort (who reached age 62 in 2013). This table highlights several features of the benefit formula. First, the formula results in a *progressive* replacement rate—measured as the percent of AIME that the PIA replaces. That is, the replacement rate is higher for lower earners (i.e., 83% for very low earners) than for higher earners (i.e., 37% for high earners). Second, the benefit formula results in *individual equity*. Specifically, the more a worker earns (and pays in payroll tax), up to the taxable maximum, the higher the PIA. For instance, a hypothetical low earner born in 1951 had monthly wage-indexed earnings of about \$1,607, resulting in a PIA of \$973.00, whereas a maximum earner born in the same year had wage-indexed earnings of about \$8,538 and thus a PIA of \$2,803.10. The maximum earner paid the largest possible amount in payroll tax in each year of employment, while the low earner paid considerably less. ¹⁷ His or her PIA is almost four times that of the very low earner.

lifetime total of \$141,477 in payroll taxes on total nominal earnings of \$2,338,700. Both workers would have been subject to the same employee payroll rate. The hypothetical maximum earner would have receive larger benefits based on higher earnings subject to the payroll tax. Social Security benefits themselves may also be subject to federal income tax. For more information, see CRS Report RL32552, *Social Security: Taxation of Benefits*.

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¹⁴ The bend points used in the PIA formula are rounded to the nearest dollar (42 U.S.C. §415(a)(1)(B)(iii)).

¹⁵ Bend points are indexed to the AWI and can decrease when AWI decreases (42 U.S.C. §415(a)(1)(B)). See **Table B-1** for a list of historical bend point values. For more information on effects of wage indexing and price indexing on benefits, see CRS In Focus IF11599, *Social Security Benefits and the Effect of Declines in Average Wages and Prices*.

¹⁶ SSA, "2021 Social Security Changes."

¹⁷ For the 1951 birth cohort, a hypothetical low earner would have paid a lifetime total of \$14,674 in Social Security payroll taxes on total nominal earnings of \$242,032, whereas a hypothetical maximum earner would have paid a lifetime total of \$141,477 in payroll taxes on total nominal earnings of \$2,338,700. Both workers would have been

Table 2. Computation of Primary Insurance Amounts (PIAs) for Hypothetical Workers Born in 1951, by Earnings Levels

	Three Brackets	PIAs for Hypothetical Workers						
Factors	of Average Indexed Monthly	Very Low Earner	Low Earner	Medium Earner	High Earner	Maximum Earner		
	Earnings (AIME) in 2013	AIME of \$893.00	AIME of \$1,607.00	AIME of \$3,572.00	AIME of \$5,716.00	AIME of \$8,538.00		
90%	first \$791 of AIME, plus	\$711.90	\$711.90	\$711.90	\$711.90	\$711.90		
32%	AIME over \$791 and through \$4,768, plus	32.64	261.12	889.92	1,272.64	1,272.64		
15%	AIME over \$4,768	0.00	0.00	0.00	142.20	565.50		
	Worker's PIA (by ded down to nearest 10 cents)	744.50	973.00	1,601.80	2126.70	2550.00		
PIA as	Percent of AIME	83%	61%	45%	37%	30%		

Source: CRS.

Notes: The bend points shown in the table apply to workers who first become eligible in 2013. See **Table B-I** for historical values of bend points. Under current law, PIA is rounded down to the nearest dime (42 U.S.C. §415(a)(1)(A)).

Benefit Amounts

The PIA calculated in the previous section may not be the benefit amount a worker will receive at retirement. The PIA is further adjusted for age at benefit claiming and COLAs to determine the benefit amount. Also, PIAs may be recomputed to capture additional covered earnings. ¹⁸

Age

The earliest eligibility age is the age at which a retired worker can first claim benefits. The full retirement age (FRA, also called the normal retirement age) is the age at which a worker can receive the full PIA, increased by any COLAs. The FRA was 65 for people born before 1938, but the Social Security Amendments of 1983 (P.L. 98-21) raised the FRA for those born later, as shown in **Table 3**.

Table 3. Full Retirement Age (FRA) by Year of Birth

	Year of Earliest Eligibility	
Year of Birth	Age	FRA
1937 or earlier	1999 or earlier	65
1938	2000	65 and 2 months
1939	2001	65 and 4 months

^{18 20} C.F.R. §404.281.

Year of Birth	Year of Earliest Eligibility Age	FRA
1940	2002	65 and 6 months
1941	2003	65 and 8 months
1942	2004	65 and 10 months
1943-1954	2005-2016	66
1955	2017	66 and 2 months
1956	2018	66 and 4 months
1957	2019	66 and 6 months
1958	2020	66 and 8 months
1959	2021	66 and 10 months
1960 or later	2022 or later	67

Source: Social Security Administration, Office of the Chief Actuary, "Normal Retirement Age," http://www.ssa.gov/OACT/progdata/nra.html.

Adjustments for Early and Late Benefit Claim

Retired workers may claim benefits when they turn 62 years old, but the longer that they wait, the higher their monthly benefit. The higher monthly benefit is intended to offset the fewer number of payments that people who delay claiming will receive over their lifetimes so that the total value of lifetime benefits is approximately the same based on average life expectancy, regardless of when they claim.¹⁹

The permanent reduction in monthly benefits that applies to people who claim *before* the FRA is an *actuarial reduction*. It equals five-ninths of 1% for each month (6½% per year) for the first three years of early claim and five-twelfths of 1% for each month (5% per year) beyond 36 months.

The permanent increase in monthly benefits that applies to those who claim *after* the FRA is called the *delayed retirement credit* (DRC). For people born in 1943 and later, that credit is 8% for each year of delayed claim after the FRA up to age 70.²⁰

For people with an FRA of 66, therefore, monthly benefits are 75% of the PIA for those who claim benefits at the age of 62 and 132% of the PIA for people who wait until the age of 70 to claim (see **Table B-2**). Because people who claim earlier receive more payments over a lifetime, all else equal, the overall effect of claiming at different ages depends on how long the beneficiary lives.

Workers with a higher FRA may receive relatively lower benefits for two reasons. First, monthly benefits will be different for individuals who have identical work histories and the same age of claiming benefits but different FRAs. For example, someone with an FRA of 66 who claims at

¹⁹ Said differently, adjustments for early or late benefit claiming is intended to be *actuarially equivalent*. Under average life expectancies, early claimants receive smaller benefits but over a longer period of time, whereas late claimants receive higher benefits for a shorter period of time. Average life expectancies vary across demographic groups such as age, race, and sex. For more information, see CRS Report R44846, *The Growing Gap in Life Expectancy by Income: Recent Evidence and Implications for the Social Security Retirement Age*.

²⁰ For people born before 1943, the DRC varies from 3.0% to 7.5% depending on the year of birth. See "Delayed Retirement Credit" in OCACT, "Early or Late Retirement?," http://www.ssa.gov/OACT/quickcalc/early_late.html#late.

age 62 will receive a monthly benefit equal to 75% of the PIA. For someone with an FRA of 67, claiming at 62 will result in a monthly benefit that is 70% of the PIA. Depending on the claiming age, the scheduled increase in the FRA from 66 to 67 will reduce monthly benefits for workers with similar earnings by between 6.1% and 7.7%. Second, lifetime benefits will be different for workers who have identical work histories and identical age of death but different FRAs. For example, consider two workers who have FRAs of 65 and 67, respectively, both of whom claim at their FRA and thus receive identical monthly benefits. If both workers die at age 75, the worker with an FRA of 65 will have received monthly benefits for 10 years, compared with the worker with an FRA of 67, who will have received monthly benefits for eight years.

Cost-of-Living Adjustments

A COLA is applied to the benefit beginning in the second year of eligibility, which for retired workers is age 63. The COLA applies even if a worker has not yet begun to receive benefits. The COLA usually equals the growth in the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W) from the third quarter of one calendar year to the third quarter of the next calendar year. The COLA becomes effective in December of the current year and is payable in January of the following year. Beneficiaries will receive a COLA of 1.3% for benefits paid in January 2021. 22

Benefit Amounts for Hypothetical Workers Born in 1951

As discussed, the PIA is not the benefit amount a worker receives. Adjustments to the PIA for early or late claiming (relative to a worker's FRA) interact with COLAs to produce the actual benefit amount. These two factors affect all claimants, while other adjustments may affect only some claimants (see "Other Adjustments to Benefits"). Table 4 shows how claiming age—and the associated actuarial reduction or DRC—works with COLAs to produce benefit amounts before other adjustments. Specifically, Table 4 shows first how the PIA is adjusted for the claimant's age. For instance, a worker born in 1951 (FRA of 66) claiming at age 62 (48 months before FRA) would receive 75% of his or her PIA. This reduction represents five-ninths of 1% reduction for 36 months and a five-twelfths of 1% reduction for 12 months. Table 4 also shows how COLAs begin to affect benefit amounts beginning at age 63. For instance, a worker born in 1951 claiming at age 66 (i.e., FRA) would receive 100% of his or her PIA plus COLAs for 2014, 2015, and 2017. (There was no COLA payable for 2016; see Table B-1.) Additionally, since the COLAs represent a percentage change in benefit amounts that increase the base benefit, benefits demonstrate cumulative growth with each COLA increase. Lastly, workers claiming benefits after FRA receive DRCs. For instance, a worker born in 1951 claiming at age 70 would receive 132% of his or her PIA plus all of the payable COLAs from 2014 through 2021.

Adjustments for early or late claiming and COLAs can have significant effects on a worker's benefit amount. For instance, a medium earner born in 1951 claiming benefits at age 62, the earliest eligibility age, would receive initial benefits of \$1,201. Those benefits would increase by annual COLAs: benefits of \$1,201 at age 62 would grow to \$1,341 at age 70. (This amount

2015 was lower than the CPI-W for the third quarter of 2014. For details, see CRS Report 94-803, Social Security:

Congressional Research Service

Cost-of-Living Adjustments.

²¹ Social Security payments always reflect the benefits due for the preceding month.

²² SSA, 2020 Social Security Changes, https://www.ssa.gov/news/press/factsheets/colafacts2020.pdf. If the CPI-W does not increase over the relevant period, no COLA is payable. No COLA was payable in January 2010 or January 2011, because the CPI-W for the third quarter of 2009 and for the third quarter of 2010 were both lower than the CPI-W for the third quarter of 2008. No COLA was payable in January 2016 because the CPI-W for the third quarter of

reflects 11.73% in cumulative COLAs.²³) In comparison, a medium earner born in 1951 claiming benefits at age 70, thereby taking advantage of all possible DRCs, would receive initial benefits of \$2,362. (This amount reflects a 32% increase from DRCs and an 11.73% increase from COLAs.)

Table 4. Monthly Benefit Amounts for Hypothetical Workers Born in 1951, by Earnings Level at Claiming Age

Primary insurance amounts (PIAs) adjusted for claiming age relative to full retirement age (FRA) and costof-living adjustments (COLAs)

Year/Age	Percent of PIA	COLA	Very Low Earner	Low Earner	Medium Earner	High Earner	Maximum Earner		
			PIAs from Table 2.						
			\$744.50	\$973.00	\$1,601.80	\$2,126.70	\$2,550.00		
				E	Benefit Amour	nts			
2013/62	75%	-	558.00	729.00	1,201.00	1,595.00	1,912.00		
2014/63	80%	1.5%	604.00	790.00	1,300.00	1,726.00	2,070.00		
2015/64	86.66%	1.7%	665.00	870.00	1,432.00	1,902.00	2,281.00		
2016/65	93.33%	0.0%	717.00	937.00	1,543.00	2,048.00	2,456.00		
2017/66	100%	0.3%	770.00	1,007.00	1,658.00	2,201.00	2,640.00		
2018/67	108%	2.0%	849.00	1,109.00	1,826.00	2,425.00	2,908.00		
2019/68	116%	2.8%	937.00	1,225.00	2,017.00	2,678.00	3,211.00		
2020/69	124%	1.6%	1,018.00	1,330.00	2,190.00	2,908.00	3,487.00		
2021/70	132%	1.3%	1,098.00	1,435.00	2,362.00	3,136.00	3,760.00		

Source: CRS.

Notes: Under current law, monthly benefit amounts are rounded down to the nearest dollar (42 U.S.C. §415(g)).

Features of the Benefit Formula

In the AIME computation, earnings are indexed to the AWI, and the bend points in the benefit formula are also indexed to growth in the AWI. As a result, replacement rates—the portion of earnings that benefits replace—remain generally stable. That is, from year to year, the average benefits that *new* beneficiaries receive increase at approximately the same rate as average earnings in the economy.

As demonstrated in **Table 2**, the benefit formula is generally considered to be *progressive*. In this context, *progressive* means that a higher share of earnings are replaced for career low earners than for career higher earners. However, although low lifetime earners have a higher replacement rate, they do not receive higher benefits compared to relatively higher lifetime earners. This feature is often referred to as *individual equity*. That is, higher lifetime earners receive higher benefits.

Additionally, as shown in **Table 4**, a worker who claimed benefits early—before reaching FRA—would receive lower monthly benefits than if he or she claimed at FRA. Furthermore, a worker

²³ The cumulative effect of the COLAs shown in **Table 4** is 11.73%.

who claimed benefits late—after reaching FRA—would receive higher monthly benefits than if he or she claimed at FRA. This feature is known as *actuarial equivalence*, because the intent is to provide the same amount of lifetime benefits regardless of when a worker claims benefits.²⁴

Lastly, all things being equal, the more years a worker is able to work, the higher dollar amount he or she may receive in benefits. Said differently, years of zero earnings will generally result in lower lifetime earnings in the Social Security benefit computation. Consider the hypothetical earners born in 1951 who are assumed to have worked continuously. If each scaled earner's highest year of earnings was replaced with a zero (representing a year out of the workforce, for example, for education, caregiving or any other reason), his or her highest 35 years of wage-indexed earnings, the amount used to compute AIME, and PIA would all decrease. (See Scenario B in **Table 5**. Scenario A reproduces information for hypothetical earners from previous sections.) The replacement rate—measured as percent of AIME replaced by PIA—increases for some earners. In Scenario B, the highest year of earnings (occurring in the hypothetical worker's late 40s) was replaced by a year of lower earnings. This has the effect of essentially taking the second-through 36th-highest years of earnings from **Table A-3**.

Scenario B demonstrates how a worker can benefit from *more* work. That is, since the highest 35 years of earnings are used in the benefit formula, the hypothetical earners still had 35 years of earnings. However, if a worker does not have 35 years of earnings, the benefit formula will impute years of zero earnings. Consider the same hypothetical earners born in 1951 but with a longer break in employment (for example, representing years out of the workforce for education, caregiving, or unemployment) of six years. In this example, Scenario C, the hypothetical workers would not have years of *extra* earnings, and one year of zero earnings would be used in their benefit calculations. **Table 5** shows how their highest 35 years of wage-indexed earnings, AIME, and PIA would decrease. As in the previous example, as a result of a decrease in cumulative lifetime earnings, some replacement rates increase. This has the effect of essentially taking the seventh- through 41st-highest years of earnings from **Table A-3**. Since the hypothetical earners had 40 years of earnings, the highest 35 years of earnings would now include one year of zero earnings.

Table 5. Wage-Indexed Earnings, Average Indexed Monthly Earnings (AIMEs), and Primary Insurance Amounts (PIAs) for Hypothetical Earners Born in 1951, by Earnings Level and Years of Earnings

	Very Low Earner	Low Earner	Medium Earner	High Earner	Maximum Earner
	Scenari	o A (from Table	e I and Table 2)		
Total Earnings from Highest 35 Years of Waged Indexed Earnings	\$375,065.37	\$675,159.58	\$1,500,603.99	\$2,400,932.27	\$3,586,573.11
AIME	893.00	1,607.00	3,572.00	5,716.00	8,538.00
PIA	744.50	973.00	1,601.80	2,216.70	2,550.00
PIA as Percent of AIME	83%	61%	45%	37%	30%

Scenario B (Scenario A with highest year of earnings removed)

²⁴ Actuarial equivalence is dependent on life expectancies, which are known to vary by demographic group. See footnote 19.

Total Earnings from Highest 35 Years of Waged Indexed Earnings	\$363,288.96	\$653,927.65	\$1,453,412.38	\$2,325,460.07	\$3,473,823.39
AIME	864.00	1,556.00	3,460.00	5,536.00	8,269.00
PIA	735.20	956.70	1,565.90	2,099.70	2,509.60
PIA as Percent of AIME	85%	61%	45%	38%	30%
Percent Reduction in PIA from Scenario A	1%	2%	2%	1%	2%

Scenario C (Scenario A with highest six years of earnings removed)

Total Earnings from Highest 35 Years of Waged Indexed Earnings	\$292,716.44	\$526,879.92	\$1,171,036.34	\$1,873,701.39	\$2,817,404.77
AIME	696.00	1,254.00	2,788.00	4,461.00	6,707.00
PIA	626.40	860.00	1350.90	1886.30	2,275.30
PIA as Percent of AIME	90%	69%	48%	42%	34%
Percent Reduction in PIA from Scenario A	16%	12%	16%	11%	11%

Source: CRS.

Note: Wage-indexed earnings are rounded to the nearest cent, and AIMEs are rounded down to the nearest dollar (see 20 C.F.R. §404.211). Under current law, PIA is rounded down to the nearest dime (42 U.S.C. §415(a)(1)(A)).

Auxiliary Benefits

Although the majority of Social Security benefits are paid to retired or disabled workers, many family members of workers are eligible to receive auxiliary benefits based on the workers' earnings. In December 2020, 10.4 million family members of retired, disabled, or deceased workers received Social Security auxiliary benefits (about 16.0% of the beneficiary population).²⁵ Social Security auxiliary benefits are payable to the spouse, divorced spouse, or dependent child of a retired or disabled worker and to the widow(er), divorced widow(er), dependent child, or parent of a deceased worker.²⁶ When dependent beneficiaries also earned worker benefits, they receive the larger of the worker or the auxiliary benefit.²⁷

Benefits payable to family members are equal to a specified percentage of the worker's PIA, subject to a *maximum family benefit*. A spouse's base benefit (that is, before any adjustments) equals 50% of the worker's PIA. A widow(er)'s base benefit is 100% of the worker's PIA. The base benefit for children of a retired or disabled worker is 50% of the worker's PIA, and the base benefit for children of deceased workers is 75% of the worker's PIA. Benefits payable to family

²⁵ SSA, "Monthly Statistical Snapshot, December 2020," Table 2. See the latest edition of the Monthly Statistical Snapshot at https://www.ssa.gov/policy/docs/quickfacts/stat_snapshot/.

²⁶ The computation of dependent benefits may be quite complex. For additional details and information on other dependent benefits, see "Benefits for the Worker's Family Members" in CRS Report R42035, *Social Security Primer*.

²⁷ Someone with an auxiliary benefit higher than his or her retired-worker benefit is referred to as dually entitled and receives his or her retired-worker benefit plus a reduced auxiliary benefit amount equal to the full auxiliary benefit minus the retired-worker benefit, in essence receiving the higher auxiliary benefit amount. For more information on dual entitlement, see CRS In Focus IF10738, *Social Security Dual Entitlement*.

members may be subject to adjustments based on the family member's age at entitlement, receipt of a Social Security benefit based on his or her own work record, and other factors.²⁸

Table C-1 provides a summary of Social Security benefits payable to the family members of a retired, disabled, or deceased worker. It includes the basic eligibility requirements and basic benefit amounts before any applicable adjustments (such as for the maximum family benefit).

Maximum Family Benefits

The total amount of Social Security benefits payable to a family based on a retired, disabled, or deceased worker's record is capped by the maximum family benefit. The family maximum cannot be exceeded regardless of the number of beneficiaries entitled to benefits on the worker's record.²⁹ If the sum of all benefits payable on the worker's record exceeds the family maximum, the benefit payable to each dependent or survivor is reduced in equal proportion to bring the total amount of benefits payable to the family within the limit. In the case of a *retired or deceased worker*, the maximum family benefit is determined by a formula and varies from 150% to 188% of the worker's PIA. For the family of a worker who attains the age of 62 in 2021 or dies in 2021 before attaining the age of 62, the total amount of benefits payable to the family is limited to

- 150% of the first \$1,272 of the worker's PIA, plus
- 272% of the worker's PIA over \$1,272 and through \$1,837, plus
- 134% of the worker's PIA over \$1,837 and through \$2,395, plus
- 175% of the worker's PIA over \$2,395.30

The dollar amounts in the maximum family benefit formula (\$1,272/\$1,837/\$2,395 in 2021) are indexed to the AWI, as in the regular benefit formula. In the case of a *disabled worker*, the maximum family benefit is equal to 85% of the worker's AIME. However, the family maximum cannot be *less than 100%* or *more than 150%* of the worker's PIA.³¹

Other Adjustments to Benefits

Other benefit adjustments apply in certain situations, including

- the *windfall elimination provision*, which reduces benefits for *worker* beneficiaries who have pensions from employment that was not subject to Social Security payroll taxes;³²
- the *government pension offset*, which reduces Social Security *spousal* benefits paid to people who have pensions from employment that was not subject to Social Security payroll taxes;³³ and

²⁸ Similar to a worker's benefit, auxiliary benefits paid to family members may also be subject to adjustment based on age. For more information, see CRS Report R41479, *Social Security: Revisiting Benefits for Spouses and Survivors*.

²⁹ Social Security Act, Title II, §203.

³⁰ SSA, "Formula for Family Maximum Benefit," https://www.socialsecurity.gov/OACT/COLA/familymax.html.

³¹ Benefits for a divorced beneficiary are not taken into account for purposes of the family maximum. See SSA, "Family Benefits Where a Divorced Spouse or a Surviving Divorced Spouse is Entitled," https://secure.ssa.gov/apps10/poms.nsf/lnx/0300615682.

³² See CRS Report 98-35, Social Security: The Windfall Elimination Provision (WEP).

³³ See CRS Report RL32453, Social Security: The Government Pension Offset (GPO).

• the *retirement earnings test*, which results in a temporary withholding of monthly Social Security benefits paid to beneficiaries who are younger than FRA and have earnings above a certain level.³⁴

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³⁴ See CRS Report R41242, *Social Security Retirement Earnings Test: How Earnings Affect Benefits*.

Appendix A. Hypothetical Workers, Wages, and Indexed Wages

SSA's Office of the Chief Actuary (OCACT) uses hypothetical earnings patterns to evaluate the program under current law and to illustrate how program changes may affect beneficiaries.³⁵ OCACT publishes scaled factors for very low, low, medium, and high earners as a percent of AWI. Hypothetical workers are assumed to have long and consistent earnings at their respective levels. At these levels, hypothetical workers have earnings from ages 21 to 64, with peak earnings in their late 40s. For instance, a hypothetical medium earner's work history would begin at age 21 with relatively *medium* wages and gradually increase until age 50, remaining relatively *medium*, and then begin to decrease until age 64. The scaled factors (i.e., percent of AWI) for different hypothetical earnings groups are shown in **Figure A-1**.

200% High 180% Medium = Low 160% •••• Very Low 140% Percent of AWI 120% 100% 80% 60% 40% 20% 0% 21 26 31 36 41 46 51 56 61 Age

Figure A-I. Scaled Factors by Hypothetical Earnings Level and Age

Percent of Average Wage Index (AWI)

Source: OCACT, Scaled Factors for Hypothetical Earnings Examples Under the 2020 Trustees Report Assumptions, April 2020, Table 6, https://www.ssa.gov/OACT/NOTES/ran3/an2020-3.pdf.

Note: There is no scaled factor for a maximum earner.

Table A-1 shows how actual workers are distributed relative to the hypothetical scaled workers. As an example, **Table A-1** shows that a hypothetical medium-scaled worker retiring at age 62 in 2019 had career average earnings of \$51,977 (in 2018 dollars). For *actual workers* retiring in years 2014-2019, 56.5% had an AIME less than the hypothetical medium earners with \$51,977 in career-average earnings. During the same 2014-2019 period, 71.2% of female workers had an AIME less than this hypothetical medium earner, whereas 42.4% of males had an AIME less than the hypothetical medium earner. **Table A-1** also shows the percent of workers with AIMEs *closest* to hypothetical scaled workers. For instance, 30.1% of workers retiring in 2014-2019 have AIMEs closest to that of a hypothetical medium-scaled worker.

³⁵ OCACT, Scaled Factors for Hypothetical Earnings Examples Under the 2020 Trustees Report Assumptions.

Table A-I. Distribution of Average-Indexed Monthly Earnings (AIMEs) of Actual Workers Retiring in Years 2014-2019, Relative to AIMEs for Hypothetical Workers Retiring in 2019

		Percent with AIME Less Than AIME for Hypothetical Case			Percent with AIME Closest to AIME for Hypothetical Case ^a		
Hypothetical Worker ^b (Career-Average Earnings) ^c	All Males	All Females	All Workers	All Males	All Females	All Workers	
Very Low (\$12,994)	7.9%	16.3%	12.0%	12.3%	24.6%	18.3%	
Low (\$23,390)	16.4	32.7	24.4	16.1	29.3	22.6	
Medium (\$51,977)	42.4	71.2	56.5	29.6	30.5	30.1	
High (\$83,163)	71.5	92.0	81.5	27.3	12.9	20.2	
Maximum (\$127,899)	100.0	100.0	100.0	14.7	2.6	8.8	

Source: OCACT, Scaled Factors for Hypothetical Earnings Examples Under the 2020 Trustees Report Assumptions, Actuarial Note Number 2020.3, April 2020, Table I, https://www.ssa.gov/OACT/NOTES/ran3/an2020-3.pdf.

Notes: Worker distributions include individuals who are dually entitled or may become dually entitled to a higher benefit in the future based on another worker's earnings record. For more information on dual entitlement, see CRS In Focus IF10738, *Social Security Dual Entitlement*.

- a. Rounded values do not necessarily sum to 100%. The percentage of workers with AIME values closest to that of the hypothetical maximum worker is expected to decline in future years. This is due to a significant increase in the OASDI maximum taxable earnings, relative to the AWI, in 1981 and a smaller increase in 1990.
- b. A hypothetical worker is assumed to have long and consistent careers with earnings at each age from 21 through 64.
- c. Career-average earnings of hypothetical scaled workers retiring at age 62 in 2019. Earnings are wage-indexed to 2018 in this calculation.

Figure A-1 showed the scaled factors for each hypothetical earning level. **Table A-1** showed who in the *actual* workforce is similar and closest to the hypothetical earnings groups. To determine what hypothetical workers earned, the scaled factor for each age is multiplied by a year's AWI. This analysis selected the 1951 birth cohort, the youngest birth cohort for which all information on wage-indexed and price-indexed parameters are known. The hypothetical worker for this birth cohort began work at age 21 in 1972 and reached peak earnings sometime in the late 1990s or early 2000s. These workers reached early eligibility age (i.e., 62) in 2013, full retirement age (i.e., 66) in 2017, and age 70 in 2021. The hypothetical earnings for each earnings level are shown in **Table A-2**. Also, wages for a maximum earner—a worker who earned at or above the contributions base in each year—is shown.

Table A-2. Hypothetical Wages for 1951 Birth Cohort by Earnings Level

Year	Age	Very Low Earner	Low Earner	Medium Earner	High Earner	Maximum Earner
1972	21	\$527.90	\$948.80	\$2,104.47	\$3,374.29	\$9,000.00

Year	Age	Very Low Earner	Low Earner	Medium Earner	High Earner	Maximum Earner
1973	22	682.21	1,227.99	2,721.28	4,358.59	10,800.00
1974	23	907.48	1,630.24	3,629.90	5,806.24	13,200.00
1975	24	1,156.54	2,080.05	4,626.17	7,405.33	14,100.00
1976	25	1,393.20	2,509.60	5,563.57	8,912.78	15,300.00
1977	26	1,623.39	2,924.05	6,483.77	10,375.99	16,500.00
1978	27	1,900.09	3,409.60	7,589.79	12,139.43	17,700.00
1979	28	2,204.06	3,971.89	8,816.23	14,108.26	22,900.00
1980	29	2,540.23	4,567.41	10,160.93	16,242.47	25,900.00
1981	30	2,919.90	5,261.32	11,693.36	18,717.64	29,700.00
1982	31	3,211.43	5,768.94	12,816.64	20,518.25	32,400.00
1983	32	3,474.55	6,248.09	13,882.95	22,218.81	35,700.00
1984	33	3,775.61	6,792.86	15,102.43	24,170.33	37,800.00
1985	34	4,037.40	7,250.50	16,115.96	25,788.91	39,600.00
1986	35	4,243.85	7,621.60	16,958.06	27,125.97	42,000.00
1987	36	4,588.20	8,255.08	18,352.80	29,371.86	43,800.00
1988	37	4,891.51	8,796.99	19,566.05	31,301.81	45,000.00
1989	38	5,145.48	9,285.99	20,622.14	32,983.36	48,000.00
1990	39	5,446.25	9,820.07	21,827.04	34,927.47	51,300.00
1991	40	5,714.64	10,295.08	22,858.56	36,578.05	53,400.00
1992	41	6,077.89	10,917.26	24,288.61	38,852.60	55,500.00
1993	42	6,176.42	11,126.81	24,705.69	39,533.73	57,600.00
1994	43	6,389.70	11,496.71	25,558.80	40,903.58	60,600.00
1995	44	6,695.23	12,056.36	26,780.94	42,839.61	61,200.00
1996	45	7,048.58	12,697.81	28,246.15	45,167.93	62,700.00
1997	46	7,514.72	13,493.59	30,004.04	48,022.93	65,400.00
1998	47	7,908.03	14,228.69	31,632.14	50,594.10	68,400.00
1999	48	8,348.74	15,052.10	33,425.41	53,474.57	72,600.00
2000	49	8,810.42	15,884.48	35,273.84	56,463.86	76,200.00
2001	50	9,020.61	16,263.43	36,148.27	57,810.89	80,400.00
2002	51	9,111.07	16,393.28	36,444.29	58,290.91	84,900.00
2003	52	9,265.67	16,691.83	37,130.80	59,375.21	87,000.00
2004	53	9,625.11	17,360.84	38,571.73	61,707.64	87,900.00
2005	54	9,903.39	17,811.32	39,613.55	63,374.29	90,000.00
2006	55	10,203.97	18,398.07	40,893.19	65,436.84	94,200.00
2007	56	10,424.61	18,788.55	41,738.86	66,790.26	97,500.00
2008	57	10,375.08	18,724.74	41,582.98	66,507.97	102,000.00

Year	Age	Very Low Earner	Low Earner	Medium Earner	High Earner	Maximum Earner
2009	58	9,933.63	17,872.40	39,693.82	63,550.82	106,800.00
2010	59	9,793.35	17,669.70	39,256.75	62,802.46	106,800.00
2011	60	9,670.41	17,363.76	38,595.69	61,804.68	106,800.00
2012	61	9,351.87	16,797.91	37,363.17	59,789.93	110,100.00
2013	62	9,157.18	16,429.07	36,538.96	58,489.27	113,700.00
2014	63	9,156.86	16,454.46	36,534.47	58,473.75	117,000.00
2015	64	9,138.74	16,449.73	36,506.86	58,439.84	118,500.00

Source: CRS.

Notes: Very low, low, medium, and high earners are assumed to work at specified ages with earnings equivalent to the respective scaled earners as shown in OCACT, Scaled Factors for Hypothetical Earnings Examples Under the 2020 Trustees Report Assumptions, April 2020, Table 6, https://www.ssa.gov/OACT/NOTES/ran3/an2020-3.pdf. All dollar values are shown in nominal terms (i.e., not indexed). Maximum earners are assumed to have earned at or above the contribution base in each respective year (see **Table B-I**).

As discussed, the first step in determining benefit amounts is to index a worker's nominal earnings to SSA's AWI (see **Table B-1**). Earnings up to age 60 are wage-indexed, and earnings after age 60 are kept in nominal terms. The wage-indexed earnings for scaled hypothetical workers born in 1951 are shown in **Table A-3**.

Table A-3. Wage-Indexed Hypothetical Wages for 1951 Birth Cohort by Earnings Level

Highest 35	Years of	Wage-Indexed	Earnings A	Are in Bold

Year	Age	Index Factor ^a	Very Low Earner	Low Earner	Medium Earner	High Earner	Maximum Earner
1972	21	6.025	\$3,180.49	\$5,716.29	\$12,678.98	\$20,329.36	\$54,223.06
1973	22	5.670	3,868.16	6,962.70	15,429.68	24,713.28	61,236.15
1974	23	5.352	4,856.70	8,724.86	19,426.78	31,074.26	70,644.73
1975	24	4.980	5,759.27	10,358.09	23,037.07	36,876.51	70,214.13
1976	25	4.658	6,489.92	11,690.45	25,916.70	41,518.30	71,271.82
1977	26	4.395	7,134.62	12,850.90	28,495.48	45,601.37	72,515.76
1978	27	4.072	7,736.33	13,882.41	30,902.34	49,426.55	72,066.78
1979	28	3.744	8,252.09	14,870.95	33,008.34	52,821.94	85,738.62
1980	29	3.435	8,724.86	15,687.56	34,899.44	55,787.53	88,957.96
1981	30	3.121	9,111.68	16,418.21	36,489.69	58,409.29	92,680.25
1982	31	2.958	9,498.49	17,062.91	37,908.02	60,687.21	95,830.07
1983	32	2.820	9,799.35	17,621.64	39,154.42	62,664.27	100,685.60
1984	33	2.664	10,057.23	18,094.42	40,228.91	64,383.46	100,689.32
1985	34	2.555	10,315.11	18,524.21	41,174.47	65,887.74	101,173.52
1986	35	2.481	10,530.00	18,911.03	42,077.04	67,306.07	104,212.12
1987	36	2.332	10,701.92	19,254.87	42,807.69	68,509.50	102,162.97

Year	Age	Index Factor ^a	Very Low Earner	Low Earner	Medium Earner	High Earner	Maximum Earner
1988	37	2.223	10,873.84	19,555.72	43,495.37	69,583.99	100,035.09
1989	38	2.138	11,002.78	19,856.58	44,097.08	70,529.54	102,640.17
1990	39	2.044	11,131.72	20,071.48	44,612.84	71,389.13	104,853.34
1991	40	1.970	11,260.66	20,286.38	45,042.63	72,076.81	105,224.34
1992	41	1.874	11,389.60	20,458.29	45,515.41	72,807.46	104,003.69
1993	42	1.858	11,475.56	20,673.19	45,902.22	73,452.15	107,018.58
1994	43	1.809	11,561.52	20,802.13	46,246.06	74,010.89	109,649.57
1995	44	1.740	11,647.47	20,974.05	46,589.90	74,526.64	106,467.59
1996	45	1.659	11,690.45	21,060.01	46,847.77	74,913.46	103,991.35
1997	46	1.567	11,776.41	21,145.97	47,019.69	75,257.30	102,489.12
1998	47	1.489	11,776.41	21,188.95	47,105.65	75,343.26	101,859.27
1999	48	1.411	11,776.41	21,231.93	47,148.63	75,429.22	102,406.83
2000	49	1.337	11,776.41	21,231.93	47,148.63	75,472.20	101,852.42
2001	50	1.306	11,776.41	21,231.93	47,191.61	75,472.20	104,962.31
2002	51	1.293	11,776.41	21,188.95	47,105.65	75,343.26	109,736.53
2003	52	1.262	11,690.45	21,060.01	46,847.77	74,913.46	109,767.55
2004	53	1.206	11,604.49	20,931.07	46,503.94	74,397.70	105,976.48
2005	54	1.163	11,518.54	20,716.17	46,074.14	73,710.03	104,678.14
2006	55	1.112	11,346.62	20,458.29	45,472.43	72,764.48	104,748.55
2007	56	1.064	11,088.74	19,985.52	44,397.94	71,045.30	103,711.48
2008	57	1.040	10,787.88	19,469.76	43,237.49	69,154.19	106,058.39
2009	58	1.056	10,487.02	18,868.05	41,905.12	67,091.17	112,749.71
2010	59	1.031	10,100.21	18,223.35	40,486.79	64,770.27	110,146.40
2011	60	1.000	9,670.41	17,363.76	38,595.69	61,804.68	106,800.00
2012	61	1.000	9,351.87	16,797.91	37,363.17	59,789.93	110,100.00
Tota	Indexed	l Earnings	406,354.53	731,462.87	1,625,588.70	2,601,045.33	3,986,299.77
Highes	t 35 Yea Earnin	rs' Indexed gs	375,065.37	675,159.58	1,500,603.99	2,400,932.27	3,586,573.11
	ge Indexe arning's (ed Monthly (AIME)	893.01	1,607.53	3,572.87	5,716.51	8,538.39

Source: CRS.

Note:

a. The index factor is computed by dividing the Social Security Administration's (SSA's) Average Wage Index (AWI) in the year a worker turns 60 by the AWI for each year of earnings. For instance, the index factor for 2010 is computed by dividing the AWI from 2011—the year in which the workers turned 60—by the AWI from year 2010 (i.e., \$42,979.61/\$41,673.83 or 1.031). Results are displayed to three decimals. See **Table B-I** for AWI values.

Appendix B. Social Security Program Information

Table B-I. Parameters Used to Calculate Social Security Eligibility and Benefits, Select Years

Year	Average Wage Index (AWI)	Annual Change (AWI)	Cost-of- Living Adjustment (COLA) ^a	Contribution and Benefit Base (Taxable Maximum)	First Primary Insurance Amount (PIA) Bend Point ^b	Second PIA Bend Point ^b	Amount Needed to Earn One Quarter of Coverage (Credit) ^c
1951	\$2,799.16	_	_	\$3,600	_	_	\$50
1952	2,973.32	6.22%	_	3,600	_	_	\$50
1953	3,139.44	5.59%	_	3,600		_	\$50
1954	3,155.64	0.52%	_	3,600		_	\$50
1955	3,301.44	4.62%	_	4,200		_	\$50
1956	3,532.36	6.99%	_	4,200		_	\$50
1957	3,641.72	3.10%	_	4,200	_	_	\$50
1958	3,673.80	0.88%	_	4,200	_	_	\$50
1959	3,855.80	4.95%	_	4,800	_	_	\$50
1960	4,007.12	3.92%	_	4,800	4,800 — —		\$50
1961	4,086.76	1.99%	_	4,800	_	_	\$50
1962	4,291.40	5.01%	_	4,800	_	_	\$50
1963	4,396.64	2.45%	_	4,800	_	_	\$50
1964	4,576.32	4.09%	_	4,800	_	_	\$50
1965	4,658.72	1.80%	_	4,800	_	_	\$50
1966	4,938.36	6.00%	_	6,600	_	_	\$50
1967	5,213.44	5.57%	_	6,600	_	_	\$50
1968	5,571.76	6.87%	_	7,800	_	_	\$50
1969	5,893.76	5.78%	_	7,800	_	_	\$50
1970	6,186.24	4.96%	_	7,800	_	_	\$50
1971	6,497.08	5.02%	_	7,800	_	_	\$50
1972	7,133.80	9.80%	_	9,000	_	_	\$50
1973	7,580.16	6.26%	_	10,800	_	_	\$50
1974	8,030.76	5.94%	_	13,200	_	_	\$50
1975	8,630.92	7.47%	_	14,100	_	_	\$50
1976	9,226.48	6.90%	8.0%	15,300	_	_	\$50
1977	9,779.44	5.99%	6.4%	16,500	_	_	\$50
1978b	10,556.03	7.94%	5.9%	17,700	_	_	250
1979	11,479.46	8.75%	6.5%	22,900	\$180	\$1,085	260
1980	12,513.46	9.01%	9.9%	25,900	194	1,171	290

Year	Average Wage Index (AWI)	Annual Change (AWI)	Cost-of- Living Adjustment (COLA) ^a	Contribution and Benefit Base (Taxable Maximum)	First Primary Insurance Amount (PIA) Bend Point ^b	Second PIA Bend Point ^b	Amount Needed to Earn One Quarter of Coverage (Credit) ^c
1981	13,773.10	10.07%	14.3%	29,700	211	1,274	310
1982	14,531.34	5.51%	11.2%	32,400	230	1,388	340
1983	15,239.24	4.87%	7.4%	35,700	254	1,528	370
1984	16,135.07	5.88%	3.5%	37,800	267	1,612	390
1985	16,822.51	4.26%	3.5%	39,600	280	1,691	410
1986	17,321.82	2.97%	3.1%	42,000	297	1,790	440
1987	18,426.51	6.38%	1.3%	43,800	310	1,866	460
1988	19,334.04	4.93%	4.2%	45,000	319	1,922	470
1989	20,099.55	3.96%	4.0%	48,000	339	2,044	500
1990	21,027.98	4.62%	4.7%	51,300	356	2,145	520
1991	21,811.60	3.73%	5.4%	53,400	370	2,230	540
1992	22,935.42	5.15%	3.7%	55,500	387	2,333	570
1993	23,132.67	0.86%	3.0%	57,600	401	2,420	590
1994	23,753.53	2.68%	2.6%	60,600	422	2,545	620
1995	24,705.66	4.01%	2.8%	61,200	426	2,567	630
1996	25,913.90	4.89%	2.6%	62,700	437	2,635	640
1997	27,426.00	5.84%	2.9%	65,400	455	2,741	670
1998	28,861.44	5.23%	2.1%	68,400	477	2,875	700
1999	30,469.84	5.57%	1.3%	72,600	505	3,043	740
2000	32,154.82	5.53%	2.5%	76,200	531	3,202	780
2001	32,921.92	2.39%	3.5%	80,400	561	3,381	830
2002	33,252.09	1.00%	2.6%	84,900	592	3,567	870
2003	34,064.95	2.44%	1.4%	87,000	606	3,653	890
2004	35,648.55	4.65%	2.1%	87,900	612	3,689	900
2005	36,952.94	3.66%	2.7%	90,000	627	3,779	920
2006	38,651.41	4.60%	4.1%	94,200	656	3,955	970
2007	40,405.48	4.54%	3.3%	97,500	680	4,100	1,000
2008	41,334.97	2.30%	2.3%	102,000	711	4,288	1,050
2009	40,711.61	-1.51%	5.8%	106,800	744	4,483	1,090
2010	41,673.83	2.36%	0.0%	106,800	761	4,586	1,120
2011	42,979.61	3.13%	0.0%	106,800	749	4,517	1,120
2012	44,321.67	3.12%	3.6%	110,100	767	4,624	1,130
2013	44,888.16	1.28%	1.7%	113,700	791	4,768	1,160
2014	46,481.52	3.55%	1.5%	117,000	816	4,917	1,200

Year	Average Wage Index (AWI)	Annual Change (AWI)	Cost-of- Living Adjustment (COLA) ²	Contribution and Benefit Base (Taxable Maximum)	First Primary Insurance Amount (PIA) Bend Point ^b	Second PIA Bend Point ^b	Amount Needed to Earn One Quarter of Coverage (Credit) ^c
2015	48,098.63	3.48%	1.7%	118,500	826	4,980	1,220
2016	48,642.15	1.13%	0.0%	118,500	856	5,157	1,260
2017	50,321.89	3.45%	0.3%	127,200	885	5,336	1,300
2018	52,145.80	3.62%	2.0%	128,400	895	5,397	1,320
2019	54,099.99	3.75%	2.8%	132,900	926	5,583	1,360
2020	_	_	1.6%	137,700	960	5,785	1,410
2021	_	_	1.3%	142,800	996	6,002	1,470

Source: CRS.

Notes: Dashes indicate data not available.

- a. Automatic COLAs became effective in 1975 as part of P.L. 92-336. Prior to this, each COLA was approved through legislation. For more information, see CRS Report 94-803, Social Security: Cost-of-Living Adjustments.
- b. Prior to 1978, the Social Security benefit amounts were calculated using a process that coupled wage and price inflation. P.L. 95-216 decoupled price and wage inflation in benefit calculations and instituted the current-law benefit formula.
- c. Prior to 1978, a worker earned a quarter of coverage for each quarter in which he or she earned \$50 in covered employment. P.L. 95-216 stipulated that a quarter of coverage for 1978 would be \$250, and that amount would be indexed annually to the average wage index.

Table B-2. Social Security Benefit Amounts, Full Retirement Age (FRA), and Delayed Retirement Credits (DRCs) by Birth Year

As a Percentage of Primary Insurance Amount (PIA) at Ages 62-70

Year of Birth/Age 62	FRA	DRC	62	63	64	65	66	67	68	69	70
1924/1986	65	3	80	86 ¾	93 1/3	100	103	106	109	112	115
1925- 1926/1987- 1988	65	3 1/2	80	86 ¾	93 1/3	100	103 ½	107	107 ½	114	117 ½
1927- 1928/1989- 1990	65	4	80	86 ¾	93 1/3	100	104	108	112	116	120
1929- 1930/1991- 1992	65	4 ½	80	86 ¾	93 1/3	100	104 ½	109	113 ½	118	I22 ½
1931- 1932/1993- 1994	65	5	80	86 3/3	93 1/3	100	105	110	115	120	125
1933- 1934/1995- 1996	65	5 ½	80	86 3/3	93 1/3	100	105 ½	Ш	116 ½	122	127 ½

Year of Birth/Age 62	FRA	DRC	62	63	64	65	66	67	68	69	70
1935- 1936/1997- 1998	65	6	80	86 ¾	93 1/3	100	106	112	118	124	130
1937/1999	65	6 1/2	80	86 ² / ₃	93 1/3	100	106 ½	113	119 ½	126	132 ½
1938/2000	65, 2 mo.	6 1/2	79 1/6	85 5/9	92 ½	98 %	105 5/12	111 11/1	I I 8 ½12	124 11/1	131 5/1
1939/2001	65, 4 mo.	7	78 1/3	84 1/9	91 1/9	97 %	104 3/3	111 2/3	118 3/3	125 3/3	132 3/3
1940/2002	65, 6 mo.	7	77 1/2	83 1/3	90	96 ¾3	103 1/2	110 ½	117 ½	124 ½	131 ½
1941/2003	65, 8 mo.	7 ½	76 ² / ₃	82 %	88 %	95 %	102 ½	110	117 ½	125	132 ½
1942/2004	65, 10 mo.	7 1/2	75 5⁄ ₆	81 1/9	87 %	94 1/9	101 1/4	108 3/4	116 1/4	123 3/4	131 1/4
1943- 1954/2005- 2016	66	8	75	80	86 3/3	93 1/3	100	108	116	124	132
1955/2017	66, 2 mo.	8	74 1/6	79 1/6	85 %	92 %	98 %	106 3/3	114 3/3	122 3/3	130 3/3
1956/2018	66, 4 mo.	8	73 1/3	78 1/3	84 %	91 1/9	97 %	105 1/3	113 1/3	121 1/3	129 1/3
1957/2019	66, 6 mo.	8	72 ½	77 ½	83 1/3	90	96 ² / ₃	104	112	120	128
1958/2020	66, 8 mo.	8	71 2/3	76 ¾	82 %	88 %	95 %	102 3/3	110 3/3	118 3/3	126 3/3
1959/2021	66, 10 mo.	8	70 %	75 5/6	81 1/9	87 %	94 1/9	101 1/3	109 1/3	117 1/3	125 1/3
1960 and later/2022 or later	67	8	70	75	80	86 ² / ₃	93 1/3	100	116	124	124

Source: CRS.

Notes: If benefits are claimed before reaching FRA (i.e., early retirement), the PIA is reduced five-ninths of 1% for each month before FRA, up to 36 months. If the number of months is greater than 36, then the PIA is further reduced five-twelfths of 1% for each month. The DRC is two-thirds of 1% per month for persons born in 1943 or later. DRCs cannot be earned after attaining age 70.

Appendix C. Auxiliary Benefits

Table C-I. Social Security Benefits for the Worker's Family Members

Basis for Entitlement	Basic Eligibility Requirements	Basic Benefit Amount Before Any Applicable Adjustments
Spouse	At least age 62, or Any age if caring for the child of a retired or disabled worker. The child must be under the age of 16 or disabled, and the child must be entitled to benefits.	50% of worker's PIA
Divorced Spouse (The divorced individual must have been married to the worker for at least 10 years before the divorce became final.)	At least age 62. Must be unmarried. Note: A divorced spouse who is under the age of 62 is not eligible for spousal benefits even if he or she is caring for the child of a retired or disabled worker.	50% of worker's PIA
Aged Widow(er) and Divorced Aged Widow(er) (The divorced individual must have been married to the worker for at least 10 years before the divorce became final.)	At least age 60. Must be unmarried (unless the marriage occurred after attainment of age 60).	100% of worker's PIAª
Disabled Widow(er) and Divorced Disabled Widow(er) (The divorced individual must have been married to the worker for at least 10 years before the divorce became final.)	At least age 50 (ages 50-59). Must be unmarried (unless the marriage occurred after attainment of age 50). The qualifying disability must have occurred: (1) before or within seven years of the worker's death; (2) within seven years of having been previously entitled to benefits on the worker's record as a widow(er) with a child in his or her care; or (3) within seven years of having been previously entitled to benefits as a disabled widow(er) that ended because the qualifying disability ended (whichever is later).	71.5% of worker's PIA ^a Disabled widow(er)s and divorced disabled widow(er)s ages 50-59 receive the same rate of reduction set for widow(er)s at age 60 (28.5% of the worker's PIA) regardless of their age at the time of entitlement

Basis for Entitlement	Basic Eligibility Requirements	Basic Benefit Amount Before Any Applicable Adjustments
Widowed Mother or Father (Young Widow(er)	Surviving spouse of any age who is caring for the deceased worker's child. The child must be under the age of 16 or disabled, and the child must be entitled to benefits.	75% of deceased worker's PIA
with Child)	Must be unmarried. Must not be entitled to widow(er)'s benefits.	
	Note: In the case of a surviving divorced parent, the child must be his or her natural or legally adopted child. The 10-year marriage requirement that applies to divorced spouses under other circumstances does not apply.	
Child	A dependent, unmarried child of a retired, disabled, or deceased worker. The child must be: (1) under the age of 18, (2) a full-time elementary or secondary student under the age of 19, or	50% of worker's PIA for child of a retired or disabled worker 75% of deceased worker's PIA for child of a deceased worker
	(3) a disabled person aged 18 or older whose disability began before age 22. The term <i>child</i> refers to a biological child, adopted child, stepchild, or, in some cases, grandchild of the worker.	
Dependent Parent of a Deceased Worker	At least age 62. Must not have married since the worker's death. Must have been receiving at least one-half of his or her support from the worker at the time of the worker's death (or, if the worker had a period of disability that continued until death, at the beginning of the period of disability).	82.5% of deceased worker's PIA if one parent is entitled to benefits 75% of deceased worker's PIA (for each parent) if two parents are entitled to benefits

Source: CRS. For more information on auxiliary benefits, see CRS Report R41479, *Social Security: Revisiting Benefits for Spouses and Survivors*.

Notes: The family relationship requirement for entitlement to benefits based on the worker's record may be met in alternative ways. For example, the relationship requirement can be met if, under state law as interpreted by the courts of the state, the applicant would be able to inherit a share of the worker's personal property if the worker were to die without leaving a will. The table shows the minimum eligibility age for each type of benefit (i.e., the age at which benefits are first payable on a reduced basis). The maximum family benefit may apply, reducing the benefit payable to each family member (excluding the worker) on a proportional basis. In the case of a retired or deceased worker, the maximum family benefit varies from 150% to 188% of the worker's PIA. In the case of a disabled worker, the maximum family benefit is equal to the lesser of 85% of the worker's AIME or 150% of the worker's PIA but no less than 100% of the worker's PIA. Other benefit adjustments may apply.

a. A worker's claiming age affects the widow(er) benefit. If a worker was receiving a reduced benefit due to claiming benefits before the full retirement age, the widow(er) benefit cannot exceed the worker's reduced benefit amount. Alternatively, if a worker was entitled (or would have been entitled) to a higher benefit due to claiming benefits after the full retirement age, the worker's PIA—adjusted to take into account the delayed retirement credit—is used to compute the widow(er) benefit, thereby increasing the benefit.

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